

## *Second Place 2009 Schubmehl-Prein Essay*

### **The \$100 Laptop: A Cyberspace Playground**

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One Laptop per Child (OLPC) attempts to bridge the “digital divide” between the rich and the poor, especially in third-world countries. In order to accomplish this, OLPC must introduce twenty-first century technology to the poverty-stricken, which can lead to more efficient means of education. Nicholas Negroponte, founder of OLPC, explains that in his opinion, “whatever big problem you can imagine, from world peace to the environment to hunger to poverty, the solution always includes education” (Pontin). The first step to improving education in poverty-stricken countries, according to OLPC, is providing children with an inexpensive yet functional laptop, informally known as the \$100 laptop.

However, OLPC is providing children with not only a laptop, but with Internet access; both social and ethical implications arise when the Internet is involved. On one hand, children can use internet access as a useful tool for communication and education. On the other hand, the Internet cannot be monitored or controlled, which may have both short-term and long-term consequences for children. If OLPC is to be successful in its endeavor to improve children’s education, they must ensure that the laptop is used for education; otherwise, it may simply become a toy, allowing children to use the Internet as a cyberspace playground. In general, since a child’s use of a laptop and the Internet cannot be monitored, the social and ethical disadvantages of the \$100 laptop outweigh the advantages.

At first glance, OLPC is socially beneficial to all involved. The company addresses inequities in distribution of information technologies; currently, higher social classes typically own three times as many computers as members of lower classes (Sanders). On the positive side, by “bridging the digital divide,” OLPC can decrease this drastic difference in technology distribution. As an example of modern-day philanthropy, the \$100 laptop has advantages; it will provide children with the Internet and other resources necessary to break centuries-old cycles of poverty. This tool can make entrepreneurs out of what used to be poorly educated children in third-world countries. In fact, some studies even indicate a direct connection between a rise in test scores and laptop use in education, but only if teachers are well trained enough to teach them how to efficiently and correctly use them (Laptops: easy fix for global education?).

Examples of social benefits of the \$100 laptop exist in rural communities today. Twenty students in Ban Samkha, a remote rice-growing village in Thailand, received the laptops and began to use Google to do research as well as connect with people around the world (The \$100 Headache). The rural village even monitored local weather reports. Since the community is especially prone to landslides, the students were able to alert other members of the community when they were at risk, and when they should take precautions (The \$100 Headache).

Another social advantage of the \$100 laptop is reducing the need for costly textbooks. Some programs are willing to write textbooks that will be free on the Internet or on CD and DVD – it would be similar to Wikipedia but more credible and under stricter editorial guidance (Laptops: easy fix for global education?). Under this infrastructure, experts expect to produce over 1,000 electronic textbooks, all of which would be easily accessible to rural children via the \$100 laptop. With the ease of a wireless Internet connection, children could download these textbooks and curricula, “allowing collaborative learning and turn teachers into facilitators” (The Monitor’s View). It is not clear yet whether the textbooks will be in the right languages; however, if they were, the \$100 laptop would be an essential tool in providing access to the textbooks to third-world children.

On another social implication, the Internet will radically alter children’s relationships with each other and people all over the world. Though OLPC wants to provide Internet solely for educational purposes, the Internet also comes with social networking sites such as Myspace and Facebook. These sites, when used appropriately, can help children learn to interact with people in their communities as well as all over the globe.

Not only is the \$100 laptop socially beneficial, but also, at first glance, the \$100 laptop is ethically moral; OLPC is a nonprofit organization whose main goal is to provide laptops with Internet access for children. Once a country orders a mass quantity of laptops, the assumption is that they will be distributed to poverty-stricken children at no cost. This can greatly benefit children in developing countries by giving them a better education, since current teachers are not very beneficial – they are either poorly educated themselves, arrive at classes drunk, or even skip classes altogether (Felenstein).

On another positive ethical implication, it can teach children how to research and gather information from the Internet, using it as a tool to increase their knowledge. This is seen currently in the United States: Sonrise Christian School in Covina, California is implementing a program called the Laptop Learning Program, in which each student is provided with a laptop in order to complete schoolwork. Thus far, studies show that this program has boosted both student academic performance and overall test scores. In addition, the school has noticed better attendance, better student behavior, better participation in class and higher homework completion rates (Sonrise Christian School). Providing these children with Internet access proved beneficial to children’s learning, and results may be similar in third-world countries as well. Though children in private schools in the United States may differ from children in third-world countries, the \$100 laptop would still benefit these children, as it has already at Sonrise Christian School.

On the other hand, the Internet could have negative social implications on third-world children. First, though laptops are commonplace in higher social classes, acceptance of the laptop by lower social classes is not certain. Children in these cultures are typically expected to help the family, not leave them behind (Surowiecki). Hence, education is not a priority in poor families in which the children usually work to earn money for the bare necessities, such as food and water. What are the chances of a child’s parents encouraging him to pursue a better education with his laptop, when they could easily sell

it for a quick \$100? In order for OLPC to have long-term success, researchers must study family, village, and societal expectations within various rural communities.

Besides the fact that society may not approve of the laptops, currently they are not even being sent to the right countries. Currently, the \$100 laptop is being distributed to such countries as Libya, Brazil, Argentina, Nigeria, and Thailand: all countries which have relatively stable economies and budgets (Surowiecki). Of course, these countries still have poverty, but they do not epitomize it. Even so, OLPC claims to try to bridge the “digital divide” between the rich and poor; however, distribution of the \$100 laptop may even create a new digital divide. For example, in Brazil, one million children will suddenly receive laptops while 44 million will not (Surowiecki). Not only will there be a digital divide between the rich and poor, but between the poor and the poorer.

Other negative social implications involve technicalities of the \$100 laptop. First, lack of power generation threatens to make the \$100 laptop worthless in some areas. Since rural areas generally lack electricity, the laptop is powered by a hand-cranked generator, having a 100:1 ratio of operating time to crank time, assuming 100% efficiency of generation of energy (Felsenstein). An example six inch crank operating at two turns per second would require a force of 11.8 pounds (Felsenstein): this would be tiring even for an adult. Can OLPC expect that a small child could generate enough power to even operate the laptop? Even if the child could do it, would he, when he could instead be earning wages for food and water for his family?

Another social problem with the \$100 laptop also involves power generation. Since an Internet connection is costly to buy and maintain, OLPC has created a mesh network – in this system, one laptop connects to several others nearby, which in turn link to others until one links to the Internet. However, mesh networking relies on all the laptops being continually on, even in a low power state. If power generation with the hand-crank is so tiring, what are the chances that children will leave it on when not using it? Chances are, if some laptops are not on, none of the others will have Internet access, except those of the people living in urban areas, who generally have laptops and Internet access anyways.

Going even further, supposing that all children continually hand-crank their laptops so that the mesh network is fully functional (not likely, but possible), the laptops will all run on the same network. Though it sounds unlikely, it is only a matter of time before someone creates a virus or Trojan horse that infects one laptop – since they are all on the same network, they could all be negatively affected. This is exemplified by Windows and Apple; Windows is plagued by more viruses in part because it is a bigger network. Therefore, it is appropriate to conclude that the bigger the network, the more viruses and other infections can harm a computer. Socially, if the children’s laptops crash due to viruses and other computer infections, they will most likely be trashed. Even if these problems were correctable, who would do it? Rahul Tongia, a professor at Carnegie Mellon University’s school of computer science, asks, “Who will service the computers when they malfunction, and who will pay for software or broken parts?” (Fraser).

Unfortunately, providing children with Internet access via the \$100 laptop has negative ethical implications as well. In the beginning, Nicholas Negroponte did not want to sell

the laptops to Americans; he and others at OLPC developed the machine for poor children in third-world countries to improve their education. However, reality kicked in when the laptops began to cost not \$100 dollars, but about \$188 (not including the cost of distribution and maintenance) (Levy). Thus, he created the “Give One, Get One” program, in which an American purchases, for \$400, one laptop for himself and one for a student in the developing world (Levy).

Several negative ethical implications arise when contemplating distributing the \$100 laptop to Americans as well as poor children in rural countries. Throughout history, Americans have been notorious consumers: will OLPC and other companies take advantage of this compelling truth? What if OLPC sold its technology to commercial manufacturers with modifications to appease Americans, and sold them for about \$250 or so? What if Amazon took advantage of the swivel screen to turn the laptop into an e-book and allowed the laptop to connect to the Amazon store? What if sites like Google, Myspace, or Facebook added their own modifications to lure Americans into buying the laptops? What once was a nonprofit enterprise could become another commercial endeavor, and not truly be philanthropy.

Though OLPC is a nonprofit organization, it must make at least enough revenue to continue their work. However, like other nonprofits, it may resort to commercial means in order to continue, losing sight of their philanthropic goal in the process. For example, Locks of Love is a supposedly nonprofit organization to which people can donate at least ten inches of hair, which in turn is sewn into a wig for cancer patients suffering from hair loss. However, due to problems in funding, Locks of Love now donates a mere twenty percent of the total hair to cancer patients, selling the remaining eighty percent to commercial enterprises that make wigs to sell to consumer Americans (Locks of Love). If OLPC turns out like other nonprofit organizations, it may lose track of its original goal: improving education in rural communities in third-world countries.

Furthermore, is OLPC really on track in improving education worldwide? Is the \$100 laptop really the most cost-effective method in this endeavor? Another idea for improving education in rural areas is distributing cell phones instead of laptops (Felenstein). Currently, there is no infrastructure to support the \$100 laptop, so OLPC is working from scratch, which is not very efficient. Instead, OLPC could utilize cell phones, since that infrastructure already exists (Surowiecki). Most of what can be done on the Internet can be done using cell phones, albeit more slowly and less glamorously.

Some sources believe that the money donated to the Third World should not be used to advocate education but merely to help the poverty-stricken survive. At the World Economic Forum in Davos, Switzerland, Marthe Dansokho, a social worker and missionary from Senegal, said, “What is needed is clean water and real schools,” (Fraser) insinuating that wealthy countries should provide the bare necessities of survival rather than the tools needed for education. Another forum participant agreed with Dansokho: “If you live in a mud hut, what use is that computer for your children who don’t have a doctor within walking distance?” (Fraser).

Although the \$100 laptop sounds like modern philanthropy epitomized, its disadvantages make it impractical. OLPC claims that its goal is “to provide children around the world with new opportunities to explore, experiment, and express themselves.” (Diodato); however, so many factors hinder this goal. Assuming that the laptops are distributed to the poorest of the poor, that they are accepted into the children’s culture, and that the children continually hand-crank their laptops in order to make the mesh network function, the children would still need teachers or some form of guidance to ensure its use in education. According to Sudeep Banerjee, India’s education secretary, “We need classrooms and teachers more urgently than fancy tools” (Sanderson). Without some form of maintenance of the laptop’s use, the \$100 laptop will simply become a \$100 toy, in which the Internet, once a useful tool for research and education, can become a cyberspace playground.

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